

What is claimed is:

1. A drive circuit of an active matrix type organic EL display panel, for current-driving an active matrix type organic EL display panel having a plurality of pixel circuits arranged in matrix, each said pixel circuit including an organic EL element, a capacitor for storing a voltage value corresponding to a value of a drive current of said organic EL element and a plurality of transistors for supplying the drive current to said organic EL element correspondingly to the voltage value, said drive circuit comprising:

a plurality of current drive circuits each provided for a data line or a column pin of said organic EL display panel, each said current drive circuit having an output pin connected to said data line or said column pin and generating a current for charging said capacitor of each said pixel circuit through said data line or said column pin and a current for initially charging said organic EL element; and

a write control circuit for controlling a write for storing the voltage value in said capacitor and for controlling a resetting the written voltage value of said capacitor.

2. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 1, wherein, in order to charge said capacitor of said pixel circuit connected to each said current drive circuit to the voltage value through said output pin within a short time, each said current drive circuit comprises a charging circuit for generating a current or a voltage for initially charging

said capacitor.

3. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 1, wherein the current for charging said capacitor to the voltage value is generated correspondingly to one of a current pulled out from said output pin to said pixel circuit and a current pulled in from said pixel circuit to said output pin and the current for initially charging said organic EL element is generated correspondingly to one of another current pulled out from said output pin to said pixel circuit and another current pulled in from said pixel circuit to said output pin.

4. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 3, wherein, in order to charge said capacitor of said pixel circuit connected to each said current drive circuit to the voltage value through said output pin within a short time, each said current drive circuit comprises a charging circuit for generating a current or a voltage for initially charging said capacitor of said pixel circuit.

5. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 4, wherein said current drive circuit is constructed with a push-pull type current output circuit, a push side of said current output circuit pulling out a current from said output pin to said pixel circuit and pull side of said current output circuit pulling in from said pixel circuit to said output pin.

6. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 5, wherein said write

control circuit resets said capacitor immediately before the voltage value is written in said capacitor and said current drive circuit resets said organic EL element immediately before said organic EL element is driven.

7. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 6, wherein the voltage resetting of said organic EL element of said pixel circuit is performed when said current drive circuit pulls in a current to said output pin of said current drive circuit.

8. A drive circuit of an active matrix type organic EL display panel as claimed in claim 6, wherein the voltage resetting of said capacitor is performed when a transistor connected in parallel to said capacitor is turned ON.

9. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 8, wherein said push side circuit includes a first current source for initially charging said organic EL element connected to said output pin through a first switch circuit, said pull side circuit includes a second current source connected to said output pin through a second switch circuit and a third current source connected to said output pin through a third switch circuit for charging said capacitor, said second current source constituting said charging circuit for generating the current for initially charging said capacitor, said third current source generating the current for writing the voltage value in said capacitor.

10. A drive circuit of an active matrix type organic EL display panel, as claimed in claim 8, wherein said push side circuit includes a first current source connected to said output pin through a first switch circuit and initially charging said organic EL element and said pull side circuit includes a second current source connected to said output pin through a second switch circuit and generating a current for writing the voltage value in said capacitor, and further comprising a voltage source connected to said output pin through a third switch circuit, said voltage source constituting said charging circuit for generating the current for initially charging said capacitor.

11. An organic EL display device having said active matrix type organic EL display panel claimed in any of claims 1 to 10.

12. An organic EL display device comprising an active matrix type organic EL display panel claimed in claim 9 and a controller, wherein said organic EL element is initially charged by said first current source under a control of said controller and said capacitor is initially charged and written with the voltage value by said second and third current source under a control of said controller.

13. An organic EL display device comprising a drive circuit as claimed in claim 12, wherein said controller generates a first control signal, a second control signal and a third control signal, an initial charge of said organic EL element is performed by turning the first switch circuit ON with said first control signal,

the initial charge of the capacitor is performed by turnning the second switch circuit ON with said second control signal and writing the voltage value in said capacitor is performed by turnning the third switch circuit ON with said third control signal.

14. An organic EL display device comprising a drive circuit as claimed in claim 10 and a controller, wherein said organic EL element is initially charged by said first current source under a control of said controller, said capacitor is initially charged by said voltage source under a control of said controller and the voltage value is stored by said second current source under a control of said controller.

15. An organic EL display device as claimed in claim 11, wherein said pixel circuit includes a first, second, third and fourth P channel MOS transistors, a gate and drain of said first transistor are connected to a selection line and said data line, respectively, at a cross point of said selection line and said data line, a source of said first transistor is connected to a gate of said third transistor through a drain-source of said second transistor, said capacitor is connected between a source and a gate of said third transistor, said source of said third transistor is connected to a power source line, a drain of said third transistor is connected to a source of said fourth transistor and a drain of said fourth transistor is connected to an anode of said organic EL element.

16. An organic EL display device as claimed in claim 15, wherein said write control circuit initially charges

said organic EL element by supplying the current for charging said organic EL element by turning said first and fourth transistors ON and initially charges said capacitor and writes the voltage value in said capacitor by sinking a current from said output pin by turning said first and second transistors ON.

17. An organic EL display device as claimed in claim 16, further comprising a fifth P channel MOS transistor arranged in parallel to said capacitor, wherein said write control circuit resets the voltage value of said capacitor by turning said fifth transistor ON.

18. An organic EL display device as claimed in claim 11, wherein said pixel circuit includes a series circuit composed of a first and second MOS transistors for driving said organic EL element and a third and fourth MOS transistors for writing the voltage value in said capacitor,

said capacitor is connected between a gate of said first MOS transistor and one of a source and a drain of said first MOS transistor,

one of a source and a drain of said second MOS transistor is connected to an anode of said organic EL element,

said third MOS transistor is connected between a gate of said first MOS transistor and the other of said source and drain of said first MOS transistor,

said fourth MOS transistor is connected between the other of said source and drain of said first MOS transistor and said output pin of said current drive circuit,

one of said gates of said second and third MOS transistors is connected to the other gate through an inverter, and

said write control circuit performs the write control by supplying control signals to said gate of said fourth MOS transistor and said gate connected to an input side of said inverter to ON/OFF control said second, third and fourth MOS transistors.

19. An organic EL display device as claimed in claim 18, wherein said pixel circuit further includes a fifth MOS transistor connected in parallel to said capacitor for discharging said capacitor and said write control circuit resets the written voltage value of said capacitor by turning said fifth MOS transistor ON.